Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-46. (canceled)

47. (previously presented) A method for the electrophoretic separation of particles, particularly of membrane-adherent macromolecules, the method comprising:

applying the particles to a substrate-supported membrane such that the particles are mobile across a surface of the substrate-supported membrane;

providing an electrical field having a direction that is oriented along the surface across which the particles are mobile; and

performing electrophoresis according to at least one of:

temporarily modifying at least one of the strength and the direction of the electrical field such that a resulting force acts on the particles causing movement among the particles that depends on the length of the particles, and

using a substrate supporting the substrate-supported membrane that has a structured membrane-compatible surface that provides a force acting on the moving particles that depends on the length of the particles.

48. (previously presented) A method according to claim 47, wherein the substrate-supported membrane is a fluid lipid membrane, particularly comprising at least one of the lipids activated by PEG and DAC-Chol lipids.

49. (previously presented) A method according to claim 48, wherein the fluid lipid membrane is a cationic fluid lipid membrane.

50. (previously presented) A method according to claim 48, wherein the fluid lipid membrane includes amphiphilic macromolecules.

51. (previously presented) A method according to claim 48, wherein the fluid lipid membrane includes bilayers of charged lipids.

52. (previously presented) A method according to claim 47, wherein the electrical field is a pulsed electrical field.

53. (previously presented) A method according to claim 47, wherein the electrical field is an alternating field on which a time constant field is superimposed.

54. (previously presented) A method according to claim 53, wherein the alternating field and the time constant field are superimposed in a crosswise manner.

55. (previously presented) A method according to claim 47, wherein the structured membrane-compatible surface including ribs, supporting the membrane.

56. (previously presented) A method according to claim 55, wherein the substrate exhibits a periodicity ranging from 2 nm to 200 nm.

57. (previously presented) A method according to claim 55, wherein the ribs have a height in the range of 1 nm to 10 nm.

58. (previously presented) A method according to claim 55, wherein the electrical field is a time constant field having a direction that is substantially parallel to the ribs.

59. (previously presented) A method according to claim 47, wherein said movement is a rotation.

60. (previously presented) A method according to claim 47, wherein:

the substrate includes an exclusion area in which the particles are not mobile; and

the method further comprises collecting the particles at said exclusion area upon providing the electrical field, prior to performing the electrophoresis.

61. (previously presented) A method according to claim 60, wherein:

the substrate-supported membrane is a fluid lipid membrane, particularly comprising at least one of the lipids activated by PEG and DAC-Chol lipids; and

the exclusion area is a non-fluid area of the fluid lipid membrane.

62. (previously presented) A method of observing an electrophoretic separation, comprising:

performing the method for the electrophoretic separation of particles of claim 47;

recording digitized image data of the electrophoretic movement; and

evaluating the recorded image data using a computer.

63. (previously presented) A method according to claim 47, wherein the particles to be separated include at least one of DNA, RNA, DNA-oligomers, RNA-oligomers, and proteins.

64. (previously presented) A method according to claim 47, further comprising providing a pH gradient, wherein the particles migrate according to the pH gradient.

65. (previously presented) A method according to claim 64, wherein the pH gradient is provided parallel to the electrical field.

66. (previously presented) A method according to claim 64, wherein the pH gradient is provided substantially perpendicular to the electrical field.

67-84. (canceled)